Case Study Proposal:
Ren, formerly Republic Protocol[1]

What Is It

Ren is a start-up that has built a trading ecosystem around their open source Republic Protocol that facilitates the trading of large blocks of cryptocurrency with minimal "slippage". The protocol involves breaking large buy orders into many smaller buy orders or large sell orders into many smaller sell orders such that no other market participant can raise the price while the buy orders are being executed or lower the price while the sell orders are being executed. Such orders are executed in a so-called "dark pool", which is "dark" because details of these orders are not publicly available.

Why This Matters

As investment in cryptocurrencies grows, market participants will need to make larger and larger trades, both from cryptocurrencies to what they like to call fiat currencies and from cryptocurrencies to other cryptocurrencies. The Republic Protocol currently supports exchanges between Bitcoin, Ethereum, and ERC20 tokens, as per the coinbureau.com review cited below, with exchanges to US Dollars to follow shortly. However, as the Republic Protocol litepaper notes, the Ren trading ecosystem supports block trades of literally anything, including the multi-billion-dollar daily trading of stocks in dark pools.

Whether the Ren ecosystem, in particular, becomes the go-to network for dark pool trading, something like it almost certainly will be.

Why This May Be Interesting

This case study would involve several important aspects of cybercurrency markets, some of which are relevant to other financial markets. These aspects include

- Some of the details of how the dance between buyers and sellers on an exchange results in "price discovery"
- The attempts of the high frequency traders to eat the block traders' lunch
- An introduction to dark pools, how they differ from exchanges, and why they are of interest to traders of large positions
- Pitfalls of dark pools and how the Ren ecosystem would address these
- The mechanics of exchanging one cybercurrency for another
- Various compliance issues such as "know your customer" and anti-money laundering

And, of course, there is lots of sexy technology, including the elegant Shamir's Secret Sharing algorithm (see below), which is needed to ensure nobody – even the pool operator – can figure out what the entirety of the block order is.

---

[1] Not to be confused with Republic crowdfunding.

While it is hard to say at present just what employment opportunities might be available within and around the Ren ecosystem, they noted in March that about 200 dark pools were already up and running. No doubt, there is much work to follow, and, even if the Ren ecosystem doesn't take off, familiarity with it will likely position a student to take advantage of whatever does.

Things to Keep in Mind for a Case Study

- The discussion of dark pools indicated above
- How the Ren ecosystem implements dark pools, as elaborated in the review below and in the litepaper, including cross chain atomic swaps to deal with the blockchains of the two currencies being exchanged
- Updates about how the ecosystem is growing

Resources:

- https://www.investopedia.com/articles/markets/050614/introduction-dark-pools.asp (Explanation of what a dark pool is and why they are of interest to market participants wanting to make large trades)
- https://www.coinbureau.com/review/republic-protocol-ren (a review of the Republic Protocol from a cryptocurrency trade website)
- https://renproject.io/litepaper.pdf (a description of some of the technical details of the Ren ecosystem, including the Republic Protocol)
- https://www.coinbureau.com/education/what-are-cross-chain-atomic-swaps (How exchanges of cybercurrencies can be effected)
- https://en.wikipedia.org/wiki/Shamir%27s_Secret_Sharing algo (details of Shamir's Secret Sharing algorithm)